

WHAT IS CLAIMED IS:

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1. An optical disk device for writing  
information on an optical disk, said optical disk device  
having an APC (Automatic Power Control) part for  
monitored driving of a laser diode, said optical disk  
10 device comprising:

preparation means for searching an unused  
partition of a test area of said optical disk and  
reading out a reference power value from said optical  
disk;

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APC-turn off means for turning off said APC  
part when it is determined that the recording speed  
exceeds a predetermined speed;

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first OPC (Optimum Power Control) means for  
obtaining a first optimum writing power value by writing  
on said unused partition by driving said laser diode at  
a plurality of first test laser power values centered on  
said reference power value, reading out said information  
recorded on said unused partition and determining the  
first optimum writing power value;

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APC-turn on means for turning on said APC part

when it is determined that the recording speed exceeds a predetermined speed; and

second OPC (Optimum Power Control) means for obtaining a second optimum writing power value by  
5 writing on a subsequent unused partition by driving said laser diode at a plurality of second test laser power values centered on said first optimum writing power value, reading out said information recorded on said subsequent unused partition and determining the second  
10 optimum writing power value.

2. The optical disk device as claimed in claim  
15 1, wherein a number of said second test laser power values are less than a number of said first test laser power values.

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3. The optical disk device as claimed in claim  
1, wherein an interval of said second test laser power  
25 values is smaller than an interval of said first test

laser power values.

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4. The optical disk device as claimed in claim  
1, wherein said first optimum writing power is derived  
using a first half of said unused partition of said test  
area and said second optimum writing power is derived  
10 using a second half said unused partition of said test  
area.

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5. The optical disk device as claimed in claim  
1, wherein said first optimum writing power is derived  
using a second half of said unused partition of said  
test area and said second optimum writing power is  
20 derived using a first half said unused partition of said  
test area.

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6. The optical disk device as claimed in claim  
1, wherein a writing operation is performed on the most  
recently used partition of the test area at a  
predetermined power value and then a writing operation  
5 is performed on said unused partition at said plurality  
of first test laser power values.

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7. The optical disk device as claimed in claim  
6, wherein said writing operation on said unused  
partition at said plurality of first test laser power  
values is performed after said optical disk has rotated  
15 through one or more revolutions.

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8. The optical disk device as claimed in claim  
1, wherein when the recording speed does not exceed a  
predetermined value, said first optimum writing power  
value is used as a writing power value.

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9. A method of writing information on an optical disk comprising a the steps of:

5           a) searching an unused partition of a test area of said optical disk and reading out a reference power value from said optical disk;

          b) turning off an APC part (Automatic Power Control) part for monitored driving of a laser diode  
10 when it is determined that the recording speed exceeds a predetermined speed (1X);

          c) for obtaining a first optimum writing power value by writing on said unused partition by driving said laser diode at a plurality of first test laser  
15 power values centered on said reference power value, reading out said information recorded on said unused partition and determining the first optimum writing power value;

          d) turning on said APC part when it is  
20 determined that the recording speed exceeds a predetermined speed; and

          e) obtaining a second optimum writing power value by writing on a subsequent unused partition by driving said laser diode at a plurality of second test  
25 laser power values centered on said first optimum

writing power value, reading out said information  
recorded on said subsequent unused partition and  
determining the second optimum writing power value.